OIB - C-130 Hercules #439 04/01/15 Science Report

Aircraft:
C-130H Hercules #439 (See full schedule)
Date:
Wednesday, April 1, 2015
Mission:
OIB
Mission Location:
Fairbanks, Alaska to Thule, Greenland
Mission Summary:

Mission: Sea Ice - South Basin Transect

This mission is a repeat of missions flown each year of OIB beginning in 2009. Timing on this flight is challenging because we must land at Thule before the airfield closes at 1600 local time, which is five hours ahead of Fairbanks local time. This means that we must depart Fairbanks before approximately 0200 local time, and this in turn means that we must fly the first few hours of this flight in darkness. In addition to Level-1 Requirements SI1 and SI2, it addresses sea ice level 1 baseline requirement SI3a by providing data on the thickness gradient and distribution of perennial and seasonal ice across the Arctic Basin.

Pre-flight satellite imagery showed clear skies for this entire flight. We found this to be the case once we were flying the line as well, as we encountered no cloud and only a few very isolated thin fog patches. We successfully collected data across 100% of the survey line.

We took off from Fairbanks at 00:38 local time, since we expected a headwind for much of the route and wanted to make certain we would have no problem landing at Thule before their airport closure at 16:00 local time. However, since we are flying this mission approximately two weeks later than we have during the last few years, we saw significantly more daytime illumination, seeing the first glow of dawn shortly after entering the survey line just off the MacKenzie Delta in Canada's Northwest Territories.

All sensors operated normally throughout the flight. We did not see any evidence of window fouling today, as we had seen on several previous missions. Also, we located and repaired a damaged wire providing power to the GPS splitter after the previous mission, eliminating that problem at least for today. We remain concerned about the fragility of that wiring because of its proximity to the location where crew members climb between the flight deck and the cargo bay in-flight, naturally searching for handholds in the process, and because the wiring itself is somewhat exposed. For that reason we plan to replace the power system to the GPS splitter, and perhaps the splitter itself, with a new system with a more secure power source, once we arrive at Thule and are reunited with all of our spare parts and supplies.

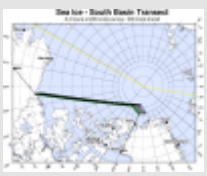
We flew a ramp pass over Thule at 1500' AGL.

Data volumes:
ATM: 21 Gb
CAMBOT: 65 Gb
DMS: 113 Gb
Ku-Band Radar: 75 Gb
MCoRDS: 783 Gb
Narrow Swath ATM: 33 Gb
NSERC Onboard Data: TBD
Snow Radar: 75 Gb

low-altitude data collection time: 5.4 hrs
high-altitude data collection time: 1.8 hrs
total data collection time: 7.2 hrs

Images:

Map of Sea Ice - South Basin Transect



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Night flying NASA-439

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ATM scan as seen in DMS imagery

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Submitted by:
John Sonntag on 04/01/15
Related Flight Report:

C-130 Hercules #439 04/01/15

Flight Number:
Sea Ice - South Basin Transect
Payload Configuration:
OIB
Nav Data Collected:
No
Total Flight Time:
8.8 hours
Submitted by:
Cate Easmunt on 04/01/15
Flight Segments:

From:	PAFA	**To:**	BGTL
Start:	04/01/15 08:38 Z	**Finish:**	04/01/15 17:28 Z
Flight Time:	8.8 hours		
Log Number:	151002	**PI:**	Michael Studinger
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		

Flight Hour Summary:

	151002
Flight Hours Approved in SOFRS	334.4
Total Used	297.6
Total Remaining	36.8

151002 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
03/12/15	ATF	Check	1.5	1.5	332.9
03/13/15	PTF - GPS	Check	2	3.5	330.9
03/13/15	PTF - Radar #1	Check	0.8	4.3	330.1
03/13/15 - 03/14/15	PTF - Radar #2	Check	4.5	8.8	325.6

03/16/15	PTF - Radar #3	Check	2.4	11.2	323.2
03/17/15	Transit	Transit	7.8	19	315.4
03/19/15	Nansen Gap	Science	7.4	26.4	308
03/24/15	Sea Ice - Zigzag East	Science	8.2	34.6	299.8
03/25/15	Sea Ice North Pole Transect ? Thule	Science	8.2	42.8	291.6
03/26/15	Sea Ice - Laxon Line	Science	9.2	52	282.4
03/27/15 - 03/28/15	Sea Ice - East Beaufort Sea	Science	8.2	60.2	274.2
03/29/15 - 03/30/15	Sea Ice - North Beaufort Loop	Science	8.9	69.1	265.3
03/30/15 - 03/31/15	Sea Ice - SIZRS Zigzag	Science	8.1	77.2	257.2
04/01/15	Sea Ice - South Basin Transect	Science	8.8	86	248.4
04/03/15	Sea Ice - South Canada Basin	Science	7.4	93.4	241
04/06/15	OIB Transit from BGTL-BGSF	Transit	3.3	96.7	237.7
04/08/15	Helheim-Kangerdlussuag	Science	8	104.7	229.7
04/09/15	K-EGIG Summit	Science	8.3	113	221.4
04/10/15	Southeast Glaciers 01	Science	8	121	213.4
04/11/15	East Glaciers 01	Science	8	129	205.4
04/13/15	Southeast Coastal	Science	7.7	136.7	197.7
04/14/15	Helheim-Kangerdlussuaq Gap B	Science	7.9	144.6	189.8
04/17/15	Umanaq B	Science	7.5	152.1	182.3
04/18/15	Southwest Coast A	Science	8.1	160.2	174.2
04/20/15	Penny 01	Science	6.3	166.5	167.9
04/21/15	Thomas-Jakobshaven 01	Science	8.7	175.2	159.2
04/22/15	Southeast Flank 01	Science	7.6	182.8	151.6
04/23/15	Jakobshavn-Eqip-Store	Science	9.2	192	142.4
04/24/15	Geikie 02	Science	8.3	200.3	134.1
04/25/15	Jakobshaven 02/ Mop Up	Science	6.9	207.2	127.2
04/27/15	Southwest Coastal B	Science	8	215.2	119.2
04/28/15	Southeast Glaciers 02	Science	7	222.2	112.2
04/29/15	TRANSIT BGSF-BGTL	Transit	2.5	224.7	109.7
04/30/15	ATM Laser Repair Checkout	Science	2.3	227	107.4
05/01/15	NW Coastal A	Science	7.2	234.2	100.2
05/05/15	IceSat-2 North / CryoSat-2 SARIn	Science	8.2	242.4	92
05/06/15	North Glaciers 01	Science	8.2	250.6	83.8
05/07/15	Devon-Barnes 01	Science	7.8	258.4	76
05/08/15	Zigzag West	Science	7.2	265.6	68.8
05/11/15	Northwest Glaciers 01	Science	7.8	273.4	61
05/12/15	North-Central Gap 02	Science	8.1	281.5	52.9
05/15/15	North-Central Gap 01	Science	7.3	288.8	45.6
05/21/15	Transit - Thule to Bangor, ME	Transit	6.5	295.3	39.1
05/22/15	Transit - Bangor, ME to WFF	Transit	2.3	297.6	36.8

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.
